



Art by
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Do Armor Crewmen Need A More Effective Personal Defense Weapon?

by Stanley C. Crist

Armored vehicle crewmen, as well as many other military personnel, have a legitimate requirement for a personal defense weapon (PDW). For most of the 20th century, the PDW issued by the majority of the world's armies has been the semi-automatic pistol. The U.S. military has also followed this practice, initially with the .45 caliber M1911 Colt, and currently with the 9mm M9 Beretta.

Unfortunately, few pistol shooters can consistently hit targets at any distance much greater than point blank range, particularly when under stress. This effect has been observed by the author in civilian "combat" handgun matches, wherein only a small percentage of competitors were able to obtain multiple hits on targets at distances over 25 meters. It can also be seen in police shootings; law enforcement officers, who generally benefit from more range time than military personnel, nevertheless miss with about two of every three shots fired at a suspect! The primary reason that a handgun delivers so little combat effectiveness is a direct result of the poor stability afforded by the "firing platform." When holding a pistol in typical shooting stances, it is very easy to experience unwanted movement about the wrist, elbow, and shoulder joints. As can be seen in the switch from .45 caliber to 9mm, this problem can't be solved merely by a reduction in caliber.

A well-designed shoulder stock can make a decided difference, giving the

personal defense weapon a degree of firing stability approaching that of a rifle. During the First World War, some European service pistols were fitted with detachable shoulder stocks, but always with less than optimum results.

Detachable stocks do provide some improvement in the ability to achieve

weapons is hampered by their underpowered ammunition, which cannot penetrate modern body armor. But even 9mm NATO ball can be stopped by the soft body armor currently proliferating around the globe.

Because of the obvious limitations of conventional pistol ammunition, some



The author's concept of the ideal personal defense weapon would be compact, lightweight, and have a high degree of commonality with the M9 Beretta. The artist's conception shown here has the telescoping stock in the retracted position.

Art by SGT Benjamin S. Ormand

hits with a pistol, but their design and construction is such that they tend to be difficult and time-consuming to affix to the weapon, especially when the shooter is under stress. A proper PDW should be built with an integral folding or telescoping stock that is configured for rapid and easy deployment.

Two such weapons are the .32 caliber Czech M61 Skorpion and the Polish PM63, which fires the 9mm Makarov round. The M61 was designed with a folding stock, while the PM63 stock telescopes. The compact size and light weight of these submachine guns enable them to be carried in a holster, a prime PDW requirement. Because of these traits, the M61 and the PM63 are the only "true" PDWs to be adopted by any of the world's armed forces. However, the combat effectiveness of both

small arms manufacturers have developed pistols and submachine guns that fire small-caliber, high-velocity (SCHV) rounds. The diminutive bullets of the Belgian 5.7 x 28mm and German 4.6 x 30mm cartridges can easily punch through NATO-standard, titanium/Kevlar armor at distances of 150 meters or more.

There are two characteristics of the small-caliber weapons that may prevent their adoption on a large scale, however. One of these aspects — the possibly minimal stopping power of the featherweight projectiles — is the subject of an ongoing debate among forensic scientists.

The other drawback is the fact that the SCHV cartridges are much longer than the 9mm NATO round, thereby making



Penetration capability of current service pistols could be greatly increased by switching from standard 9mm ball ammo (left) to a hard-core, very high-velocity 9mm round (center), or a "necked-down" cartridge with reduced-diameter, lightweight bullet (right). Use of the latter would necessitate a barrel change, but should be compatible with 9mm magazines if the cartridge case is properly designed.

it impossible to convert existing 9mm weapons to the newer calibers.

Since most of the world's military forces have substantial investments in 9mm service pistols, adopting an SCHV personal defense weapon would either complicate the logistical equation or cause premature (and wasteful) disposal of the 9mm handguns before the end of their useful service life. And, while there is a definite requirement for a true PDW to arm some military personnel, there will almost certainly continue to be a need for a conventional handgun as the desired armament for other individuals.

The main advantages of the 4.6 x 30mm and 5.7 x 28mm cartridges are superior penetration and minimal recoil. But it is also quite feasible to produce 9mm loadings that will defeat Kevlar and similar materials, thereby increasing the combat potential of the M9 pistol. As a matter of fact, the Swedish company that developed the XM993 and XM995 armor-piercing, rifle/machine gun ammunition also created a 9mm "High Performance" (HP) round.

Although it slices through soft body armor like the proverbial hot knife through butter, the 9mm HP load has curiously not been adopted by the U.S. Army. Speculation in the popular press attributes this decision to the fear expressed by some legislators that military 9mm Kevlar-defeating ammunition might find its way into civilian hands. The rationale is that since 9mm handguns are readily available to criminals, this would pose a threat to law enforcement officers.

If this is, indeed, the case, there is another way to increase the penetration capability of the current sidearm, while minimizing the potential misuse by the criminal element.

This option is to use an improved cartridge that can feed from existing 9mm magazines, which would allow current 9mm weapons to continue to be utilized with perhaps no more than a change of barrels. There would be minimal impact on logistics, as existing stocks of 9mm ammunition could be consumed in training, to be gradually replaced with the high performance rounds. A ban on the manufacture and sale to civilians of ammunition (and, perhaps, barrels) in the new caliber should effectively eliminate the danger to police, while permitting the military to have more effective handgun ammunition.

The proposed cartridge would be similar in appearance to the 7.65 x 21mm round for which the famed Luger pistol originally was chambered, except the case would be sized for a bullet of different diameter to preclude firing in weapons chambered for the 7.65 Luger cartridge. An 8mm projectile would likely deliver the most stopping power, but a bullet of 7mm or smaller diameter would produce the best penetration and flattest trajectory. It should be possible to propel such a small-caliber, steel-core bullet at velocities well in excess of 2000 feet per second, thereby assuring easy penetration of the NATO titanium/Kevlar body armor.

Having covered the development of improved performance ammunition for the service pistol, the next issue that needs to be addressed is the design of a more effective personal defense weapon. To reduce the impact on logistics and training, the PDW should have the highest possible degree of commonality and interchangeability with the M9. At the very least, it should use the same magazines, and it would be very desirable to have the controls — trigger, safety, slide stop, and magazine release — operate the same as on the Beretta.

Probably the PDW should be made to function only semi-automatically, because of the relatively small magazine capacity and the fact that such compact, lightweight weapons are all but uncontrollable when fired in full-auto mode. At most, it might have two-shot burst capability, but only if it were demonstrated to provide a substantial improvement in hit probability. In that event, consideration should also be given to issuing the 20-round magazines manufactured for the Beretta M93R machine pistol (Note: these larger-capacity magazines will also fit the M9).

Barrel length of the PDW would have to be increased to at least six inches in order to have enough area ahead of the trigger guard for the supporting hand to grasp, and a tang would project downward at the forward end of the weapon to keep the shooter's fingers from slipping in front of the muzzle. A longer barrel will coincidentally increase velocity and reduce muzzle flash by allowing more complete combustion of the propellant prior to bullet exit.

A rapidly-deployable, telescoping stock would enable the weapon to be aimed and fired from the shoulder with good accuracy. If the situation warranted, the PDW could also be drawn from its holster and (with the stock in the retracted position) fired like the service pistol, especially if the Beretta's double-action trigger mechanism were retained.

Because this PDW concept is based on the M9 pistol, with which it is intended to share many components and design features, development time and expense should be minimal. Best of all, it should be able to meet all of the mission requirements regarding weight, holster compatibility, shoulder stock, magazine capacity, and armor penetration, making this almost the ideal personal defense weapon.

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